# UNITED STATES PATENT AND TRADEMARK OFFICE

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| EXAMINER |
|---|
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| ART UNIT | PAPER NUMBER |
|---|---|
| 2135 | |

DATE MAILED: 05/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 09/844,898 | OLSON ET AL. |
| | Examiner | Art Unit | |
| | Linh LD Son | 2135 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☒ Responsive to communication(s) filed on <u>24 February 2006</u>.

2a)☒. This action is **FINAL.**        2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) *1-13, 16-46 and 48* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13, 16-46 and 48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All  b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>02/06</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

## DETAILED ACTION

1.      This Office Action is responding to the amendment received on 02/24/06.

2.      Claims 1-13, 16-46, and 48 are pending.  Claims 14-15, and 47 are canceled.

### *Claim Objections*

3.      In claim 1, Applicant amended the limitation "a display side coupled to the source

side via a digital link, comprising a second memory".  In the first paragraph of

page 15 of the specification, the display side is defined as the "receiver side" (i.e.

set-top box).

4.      Then, Applicant amended the limitation "wherein the second memory is used to

store the cryptographic key temporarily on the display side before the

cryptographic key is used for encrypting the digital data", which recites that the

cryptographic key is stored temporarily on the display side.  In the last paragraph

of page 10 continuing to first paragraph of page 11 of the specification, Applicant

recites "The encryption keys loaded in to the RAM 307 typically are stored there

temporarily and may be reloaded as needed from internal or external sources,

such as ... a smart card, a set-top box, ... ", which says that the encryption keys

loaded in to the RAM 307 temporarily, and then may be reloaded from a set-op

box, which is the receiver side.  As evidenced, the cited pages and paragraphs in

the specification does not provide any support for such claim limitation "…the

second memory is used to store the cryptographic key temporarily on the display

side…". Applicant needs to clarify such claim support or makes appropriate

modification to overcome the claim objection.

5.      In additional, let's assume the fact that the cryptographic key can be stored

temporarily on the display side. Where in the specification has the support for

the claim limitation, "a selector, wherein the selector: couples the first memory to

the second memory via the digital data input medium, provides the cryptographic

key to the second memory". Base on the specification cited above, the second

memory is on the display side, i.e. the receiver side. Applicant needs to point out

the support for such claim limitation or makes appropriate modification to

overcome the claim objection.


## Claim Rejections - 35 USC § 112


6.      The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.


7.      Applicant amended the limitation "a display side coupled to the source side via a

digital link, comprising a second memory" in claim 1. Examiner is unclear where the

second memory resigns. Is it in the source side or the display side? Applicant needs to

make appropriate correction to the claim language to clarify the location of the second

memory. For the sake of examination, Examiner assumes that the "second memory"

resigns on the display side.

8.      The language of the limitation " wherein the second memory is used to store the

cryptographic key temporarily on the display side before the cryptographic key is used

for encrypting the digital data" is not clearly defined where the encrypting process

carried out. Is the encrypting process done at the display side or the source side?

Applicant needs to make appropriate modification to the claim language to clarify the

location of the encrypting process carried out. For the sake of examination, Examiner

assumes that the "encrypting process" is done on the source side.

## *Claim Rejections - 35 USC § 103*

9.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

10.    Claims 1, 6-7, 12-13, 16-21, 26-37, 41, and 48 are rejected under 35 U.S.C.

103(a) as being unpatentable over Harrison et al, US/6101255, hereinafter

"Harrison" (Cited in PTO 892 dated 12/11/05), in view of Etzel et al, US/6577734,

hereinafter "Etzel" (Cited in PTO 892 dated 10/29/04).

11.    As per claims 1 and 7:

Harrison discloses "A system for distributing cryptographic keys for encrypting digital

data, the system comprising:

a source side comprising:

a first memory for storing a cryptographic key" in (Fig 1, # 36, 38, and Col

5 lines 25-41), and

"a digital data input medium for receiving digital data to be encrypted" in

(Fig 1, #13, Col 5 lines 10-12);

*a display side coupled to the source side via a digital link, comprising a*

*second memory;*

a multiplexer coupled to the digital data input medium, the multiplexer

multiplexing transmission of the digital data and the cryptographic key on the digital

data input medium" in (Fig 1, #11, Col 4 lines 7-24, Col 5 lines 30-36); and

"a selector, wherein the selector:

couples the first memory to the second memory via the digital data input

medium" in (Fig 1, #11, Col 3 lines 40-60, Col 4 lines 42-49, Col 5 lines 30-36,.

and Col 14 lines 5-15),

"receives the digital data and the cryptographic key from the multiplexer"

in (Fig 1, Col 4 lines 42-49), and

"provides the cryptographic key to the second memory" in (Col 3 lines 33-

60),

" wherein the second memory is used to store the cryptographic key temporarily on the

display side before the cryptographic key is used for encrypting the digital data." in (Col

3 lines 33-60). Harrison further teach of an external host of providing key for encryption

in (Col 3 lines 33-60)

However, Harrison does not explicitly teach "*a display side coupled to the source

side via a digital link, comprising a second memory*".

Nevertheless, Etzel does teach "*a display side coupled to the source side via a

digital link, comprising a second memory*" in (Col 6 lines 23-45).

Therefore, it would have been obvious at the time of the invention was made for one

having ordinary skill in the art to modify Harrison's invention to incorporate Etzel's

teaching of the display side has a second memory in order to receive or generate a

session key for encrypting the digital data sending to the display side or receiver.

12.     As per claims 6 and 26:

Harrison discloses "The system according to claim 1, wherein the second memory and

the selector are implemented on a single integrated circuit chip" in (Fig 1 #17, Col 3

lines 42-49).

13.    As per claims 12, 16, 30, and 32:

Harrison discloses "A system for encrypting digital data, the system comprising:

A source side comprising:

a first input terminal for receiving the digital data" in (Fig 1, #13, Col 5 lines

10-12), and

"a second input terminal for receiving a key" in (Fig 1, # 36, 38, and Col 5

lines 25-41);

"a multiplexer coupled to the first input terminal and the second input

terminal, wherein the multiplexer multiplexes output of the digital data from the

first input terminal and the key from the second input terminal" in (Fig 1, #11, Col

4 lines 7-24, Col 5 lines 30-36).

**"a display side coupled to the source side via a digital link,**

**comprising a display side memory"**;

"an encryptor for receiving and encrypting the digital data using the key" in

(Fig 1#17, Col 4 lines 25-49, and Col 5 lines 25-35);

a selector switch for receiving the digital data and the key from the

multiplexer" in (Fig 1, #11, Col 3 lines 40-60, Col 4 lines 42-49, Col 5 lines 30-36,

and Col 14 lines 5-15), "wherein the selector switch provides the digital data and

the key to the encryptor, the key being temporarily stored in the display side

memory (external host)" in (Col 3 lines 33-60); and

"a first output terminal for transmitting the encrypted digital data (Fig 1,

#37), wherein the system receives the key from an external key storage medium

(Col 5 lines 30-36) via the second input terminal" in (Col 4 lines 7-24, Col 4 lines

42-49). Harrison further teach of an external host of providing key for encryption

in (Col 3 lines 33-60)

However, Harrison does not explicitly teach "*a display side coupled to the source*

*side via a digital link, comprising a second memory*".

Nevertheless, Etzel does teach "*a display side coupled to the source side via a*

*digital link, comprising a second memory*" in (Col 6 lines 23-45).

Therefore, it would have been obvious at the time of the invention was made for one

having ordinary skill in the art to modify Harrison's invention to incorporate Etzel's

teaching of the display side has a second memory in order to receive or generate a

session key for encrypting the digital data sending to the display side or receiver.

14.    As per claims 13 and 31:

Harrison discloses "The system for encrypting digital data according to claim 12,

wherein the display side memory is a random access memory (RAM)" in (Etzel, Col 7

lines 25-35).

15.    As per claims 17 and 33:

Harrison discloses "The system for encrypting digital data according to claim 12,

wherein the second input terminal receives the key as a plurality of key segments" in

(Col 12 lines 60-67).

16.    As per claims 18-19 and 34-35:

Harrison discloses "The system for encrypting digital data according to claim 12,

wherein the key includes a decryption key, which is used for decrypting the encrypted

digital data" in (Col 15 lines 1-12).

17.    As per claim 20:

Harrison discloses "The system for encrypting digital data according to claim 19,

wherein the decryption key is encoded prior to being transmitted via the first output

terminal" in (Col 17 lines 23-29).

18.    As per claim 27:

Harrison discloses "The system for encrypting digital data according to claim 12,

wherein the second input terminal comprises a control bus, and wherein the system

further comprises a controller coupled to the control bus, wherein the controller controls

data flow in the system" in (Fig 1, # 36, 38, and Col 5 lines 25-41).

19.    As per claim 28:

Harrison discloses "The system of encrypting digital data according to claim 27, wherein

the control bus comprises an $I^2C$ bus" in (Fig 1, # 36, 38, and Col 5 lines 25-41).

20.     As per claim 29:

Harrison discloses "The system of encrypting digital data according to claim 27, wherein

the controller is selected from a group consisting of a finite state machine (FSM), a

microprocessor and a micro controller" in (Fig 1, # 36, 38, and Col 5 lines 25-41).

21.     As per claims 21, and 36-37:

Harrison discloses "The system for encrypting digital data according to claim 20,

wherein the key includes an encoding key, and the encoding key is used to encode the

decryption key in the encryptor before the decryption key is transmitted via the first

output terminal" in (Col 17 lines 23-29).

22.     As per claim 48:

Harrison discloses "The system for encrypting digital data according to claim 12,

wherein the display side memory is an integral component of the encryptor" in (Fig 1,

#9).

## Claim Rejections - 35 USC § 103

23.     The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

24.     Claims 2-5, 8-11, 22-25, and 38-40 rejected under 35 U.S.C. 103(a) as being

unpatentable over Harrison in view of Etzel et al, US Patent No. 6577734B1,

hereinafter "Etzel" (cited in PTO 892 dated 09/24/04).

25.     As per claims 2, 8, 22, 38, and 40:

Harrison discloses "The system according to claim 1". However, Harrison does not

specifically teach "wherein the digital data comprises digital video data".

Nevertheless, Etzel discloses a cryptographic system which is implemented to encrypt

the digital video data" in (Col 2 lines 45-48).

Therefore, it would have been obvious at the time of the invention was made to one

having ordinary skill in the art to incorporate Etzel's teaching with Harrison to utilize the

cryptographic system in Harrison to encrypt digital video data.

26.     As per claims 3, 9, 23, and 39:

Harrison and Etzel discloses "The system according to claim 2" However,

Harrison does not discloses "wherein the digital video data is in composite RGB format".

Nevertheless, Etzel discloses the digitized video signal and MPEG-2 encoding provided

to the user over the cable-TV systems and direct broadcast satellite video systems (Col

1 lines 15-18, and Col 2 lines 45-50). Therefore, it would have been obvious at the time

of the invention for one having ordinary skill in the art to recognize that the video

broadcasting technology, which is implemented in Etzel's invention, must be RGB

(Color) to be compatible with the customer TV display. Further, Black and White

movies and images are not favored to the customers.

27.     As per claims 4, 10, and 24:

Harrison discloses "The method according to claim 8". However, Harrison does not

specifically teach "wherein the digital data comprises multimedia data"

Nevertheless, Etzel discloses a cryptographic system, which is implemented to encrypt

the multimedia data in (Col 2 lines 35-40).

Therefore, it would have been obvious at the time of the invention was made to one

having ordinary skill in the art to incorporate Etzel's teaching with Harrison to utilize the

cryptographic system in Harrison to encrypt the multimedia data.

28.     As per claims 5, 11, and 25:

Harrison discloses "The method according to claim 7". However, Harrison does not

specifically teach "wherein the first set of encryption keys includes keys compatible with

the High-bandwidth Digital Content Protection specification"

Nevertheless, Etzel discloses a cryptographic system, which is implemented the

"encryption keys includes keys compatible with the High-bandwidth Digital Content

Protection specification" in (Col 1 lines 30-40).

Therefore, it would have been obvious at the time of the invention was made to one

having ordinary skill in the art to incorporate Etzel's teaching with Harrison to utilize the

keys compatible with the High-bandwidth Digital Content Protection specification in

Etzel to better protect the digital content in transmission.

### Allowable Subject Matter

29.    Claims 42-46 were previously allowed.

### Conclusion

**30.**    Applicant has amended claims 1, 7, 12, and 30, which necessitated new grounds

of rejection.  See Rejections above.

31.    Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action.  Accordingly, **THIS ACTION IS MADE FINAL**.  See MPEP

§ 706.07(a).  Applicant is reminded of the extension of time policy as set forth in

37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action.  In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action.  In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

32.     Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Linh LD Son whose telephone number is 571-

272-3856.  The examiner can normally be reached on 9-6 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kim Vu can be reached on 571-272-3859.  The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system.  Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Linh LD Son
Examiner
Art Unit 2135

HOSUK SONG
PRIMARY EXAMINER